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Inventor: FUJITA KAZUO, FUNYU SADAU, MIYATA YUTAKA, TAKAYAMA AKIHIRO

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Title of invention: Cleaning apparatus of seat-shaped article

Abstract: [ABSTRACT]

Is disposed in cleaning roll of a pair of the first installed in right and left and the abbreviation perpendicularity lower part, cleaning roll of a pair of the second installed in right and left is comprised, letter of seat article, of the first cleaning roll, it is generally transported from perpendicularity top, and letter of seat article is transported between the first cleaning roll interval and the second cleaning roll, letter of seat article is generally transported underneath vertically and, a wrinkle, occasion bending do not produce to letter of seat article by removing attachment of letter of seat article face.

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(57)
[ABSTRACT]

[PROBLEM TO BE SOLVED]

A chestnut - *ninguro* device of the letter of sea - toe thing which can remove adhesion thing such as a dust dust is provided without a wrinkle, occasion bending occurring to a letter of sea - toe thing.

[SOLUTION]

At a minimum, the second a pair of chestnut - *ninguro* - roux 7a, 7b which is disposed generally verticality of the first a pair of chestnut - *ninguro* - roux 6a, 6b and the first chestnut - *ninguro* - roux installed in right and left underneath, and was installed in right and left are comprised, letter of sea - toe thing 1 is transported from the first chestnut - *ninguro* - roux 6a, abbreviation verticality top of 6b, and letter of sea - toe thing 1 is transported between the first chestnut - *ninguro* - roux 6a, 6b interval and the second chestnut - *ninguro* - roux 7a, 7b, it is configured to remove adhesion thing of one letter of sea - toe thing surface because generally verticality transports letter of sea - toe thing 1 underneath.

[CLAIM FOR THE UTILITY MODEL REGISTRATION]

[Claim 1]

It makes chestnut - *ninguro* - roux touch in the surface of a sea - toe-shaped thing and, in a chestnut - *ningu* device removing adhesion thing in the surface of a sea - toe-shaped thing; A chestnut - *ningu* device; wherein; The first a pair of chestnut - *ninguro* - roux which were installed in right and left, At a minimum, the second generally perpendicular a pair of chestnut - *ninguro* - roux which is disposed underneath, and was installed in right and left of the first said chestnut - *ninguro* - roux is comprised, a letter of above sea - toe thing is transported from abbreviation verticality top of the first chestnut - *ninguro* - roux, and a letter of sea - toe thing is transported between a chestnut - *ninguro* - roux interval of the first above and the second chestnut - *ninguro* - roux, it is configured to remove adhesion thing of the letter of sea - toe thing surface because generally verticality transports a letter of above sea - toe thing underneath.

[Claim 2]

The chestnut - *ningu* device which is mentioned in claim 1; wherein; A letter of sea - toe thing derivation end of a letter of sea - toe thing feed means transporting a letter of said sea - toe thing between the first chestnut - *ninguro* - roux is installed in a direction on the first chestnut - *ninguro* - roux.

[Claim 3]

The chestnut - *ningu* device which is mentioned in claim 2; wherein; A letter of sea - toe thing feed means establishes a letter of sea - toe thing derivation end of the first chestnut - *ninguro* - roux side in a direction in the first chestnut - *ninguro* - roux, and it is belt conveyor formed in a slant state by disposing other end more above from a letter of sea - toe thing derivation end of the first chestnut - *ninguro* - roux side or low - *rakonbea*.

[Claim 4]

Claim 2 or the chestnut - *ningu* device which is mentioned in claim 3; wherein; A guide member regulating sides of a letter of sea - toe thing is formed in a letter of said sea - toe thing feed means.

[Claim 5]

Claim 2 - the chestnut - *ningu* device which is described by either of claim 4; wherein; In a letter of said sea - toe thing feed means, a guiding board regulating a conveying direction of a letter of sea - toe thing installed in between a letter of sea - toe thing derivation end of the first chestnut - *ninguro* - roux side and the first chestnut - *ninguro* - roux is comprised.

[Claim 6]

The chestnut - *ningu* device which is mentioned in claim 1; wherein; The first *te* - professional - roux that adhesion *te* - Pooh to touch the first said chestnut - *ninguro* - roux with is wound, The second *te* - professional - roux that adhesion *te* - Pooh to touch the second chestnut - *ninguro* - roux with is wound is comprised, the first said *te* - professional - roux comprises the first a pair of chestnut - *ninguro* - roux and two *te* - professional - roux to contact with respectively, *te* - professional - roux of the second above comprises the second a pair of chestnut - *ninguro* - roux and two *te* - professional - roux to contact with respectively.

[BRIEF DESCRIPTION OF DRAWINGS]

[FIG. 1]

It is a schematic side elevation showing an embodiment of a chestnut - *ningu* device hanging in the present invention.

[FIG. 2]

It is a feature enlarged view of chestnut - *ningu* region of a chestnut - *ningu* device shown in FIG. 1 (a), and a figure (b) to show a use state in is a figure to show a non-use state in.

[FIG. 3]

It is an outline illustration to show chestnut - *ningu* part of a conventional chestnut - *ningu* device.

[DENOTATION OF REFERENCE NUMERALS]

One two four five printed circuit board belt conveyor 2a guide member 3a guide board 3b guide board belt conveyor belt conveyor 6a, chestnut - *ninguro* - roux 7a of the first 6b, chestnut - *ninguro* - roux 8a of the second 7b, 8b *te* - professional - roux 9a, 9b *te* - professional - roux

[DETAILED DESCRIPTION OF THE INVENTION]

[0001]

[FIELD OF THE INVENTION]

The present invention relates to a chestnut - *ningu* device of a letter of sea - toe thing, and a printed circuit board, metal foil, a film employing in touch panel, a chestnut - *ningu* device of a letter of sea - toe thing such as a film such as a photograph are related to more in detail.

[0002]

[PRIOR ART]

There is a thing avoiding dust, a dust in a printed circuit board, metal foil, a film employing in touch panel, a letter of sea - toe thing such as a film such as a photograph conventionally, chestnut - *ningu* of a letter of sea - toe thing was done in the manufacturing processes. By way of example only, Chestnut - *ningu* is done before forming mask layer, insulating layer, an electrically conductive layer, the indication layer when a printed circuit board is explained for an example. When this prints with adhesion thing such as a dust, dust having bonded to print side, print putter - *n* can be cut by adhesion thing, and the reason is because the part which is not printed occurs. These turn the low - roux which wound adhesion *te* - Pooh as the general chestnut - *ningu* device that chestnut - *ningu* does a letter of sea - toe thing on a printed circuit board, it makes adhesion thing such as earthly affairs bond to outer circumferential surface of the low - roux, a thing removing adhesion thing of a printed circuit board is used.

[0003]

In addition, A chestnut - *ningu* device as shown in Japanese Utility Model Laid-Open No. 5-9685 bulletin is proposed, too. A chestnut - *ningu* device shown at Japanese Utility Model Laid-Open No. 5-9685 bulletin is explained based on FIG. 3 to be concrete. As shown in FIG. 3, vice-chestnut - *ninguro* - roux 24 doing *setsurisakudo* each and 25 are installed in run road two sets of twin slight master of adhesiveness chestnut - *ninguro* - roux 22a, 22b touching letter of sea - toe thing 21 and 23a, 23b and those master chestnut - *ninguro* - roux 23a, 22a and 23b, 22b at this chestnut - *ningu* device.

[0004]

In addition, Adhesion film 28 which it flocks, and it is flocked, and it is wound off, and is wound off axis 26a, 27a by axis 26b, 27b is installed in an interval of main chestnut - *ninguro* - roux 23b, 22b and vice-chestnut - *ninguro* - roux 25 between main chestnut - *ningu* 23a, 22a and vice-chestnut - *ninguro* - roux 24 threadably each again.

[0005]

This chestnut - *ningu* device contacts with two sets of slightly adhesive main chestnut - *ninguro* - roux 22a, 22b and 23a, 23b with the surface of letter of sea - toe thing 21, letter of sea - toe thing 21 is transported to a direction of an arrow shown in FIG. 3. Thus, At first adhesion thing such as a dust, dust bonds to slightly

adhesive master chestnut - *ninguro* - roux 22a, 22b and 23a, 23b in the surface of letter of sea - toe thing 21. And, Main chestnut - *ninguro* - roux 22a, 22b and the adhesion thing that bonded to 23a, 23b bond to adhesion film 28. Thus, Adhesion thing of a printed circuit board can be removed by means of this chestnut - *ningu* device, main chestnut - *ninguro* - roux 22a, 22b and the adhesion thing that bonded to 23a, 23b can be removed with adhesion film 28.

[0006]

[PROBLEM TO BE SOLVED BY THE INVENTION]

Now, When chestnut - *ningu* work is done by means of this kind of chestnut - *ningu* device , as against main chestnut - *ninguro* - roux 22a, 22b, there is the case that letter of sea - toe thing is had flabby, and is interposed, there was a problem of technology that a wrinkle and occasion bending occurred by main chestnut - *ninguro* - roux 22a, 22b and 23a, 23b to the letter of sea - toe thing which it was had flabby, and was interposed. Between main chestnut - *ninguro* - roux 22a shown in FIG. 3, 22b, it is necessary for it to be interposed without having flabby letter of sea - toe thing to solve this technical problem. However, Because thicknesses of a sea - toe-shaped thing are thin, a ratio it is difficult in work to interpose between main chestnut - *ninguro* - roux 22a, 22b without making a letter of sea - toe thing have flabby, and to occur a wrinkle and occasion bending, high, of a potato, it was.

[0007]

The device is achieved to solve the described above technical problem, it is directed to that a chestnut - *ningu* device of the letter of sea - toe thing which can remove adhesion thing such as a dust dust is provided without a wrinkle, occasion bending producing to a letter of sea - toe thing.

[0008]

[MEANS TO SOLVE THE PROBLEM]

It makes chestnut - *ninguro* - roux touch a chestnut - *ningu* device of a letter of sea - toe thing suffering from the present invention that was done to solve the problem in the surface of a letter of sea - toe thing, and, at a minimum, the second a pair of chestnut - *ninguro* - roux which is disposed generally verticality of the first a pair of chestnut - *ninguro* - roux installed in right and left in a chestnut - *ningu* device removing adhesion thing in the surface of a letter of sea - toe thing and the first chestnut - *ninguro* - roux underneath, and was installed in right and left is comprised, a letter of sea - toe thing is transported from abbreviation verticality top of the first chestnut - *ninguro* - roux, and a letter of sea - toe thing is transported between the first chestnut - *ninguro* - roux interval and the second chestnut - *ninguro* - roux, it is characterized by that it is configured to remove adhesion thing of the letter of sea - toe thing surface because generally verticality transports a letter of sea - toe thing underneath.

[0009]

Thus, The first chestnut - *ninguro* - roux and the second chestnut - *ninguro* - roux are disposed up and down, the sea - toe-shaped thing, of the first chestnut - *ninguro* - roux , in a state to be flat without having flabby in a letter of sea - toe thing, a letter of sea - toe thing can be supplied between chestnut - *ninguro* - roux of the first to generally transport from top vertically. As a result, Adhesion thing of dust dusts can be removed without a wrinkle, occasion bending occurring to a letter of sea - toe thing.

[0010]

Here, It is desirable that a letter of sea - toe thing derivation end of a letter of sea - toe thing feed means transporting a letter of sea - toe thing between the first chestnut - *ninguro* - roux is installed in a direction on the first chestnut - *ninguro* - roux, and a letter of sea - toe thing feed means establishes a letter of sea - toe thing derivation end of the first chestnut - *ninguro* - roux side in a direction in the first chestnut - *ninguro* - roux again, and it is belt conveyor formed in a slant state by disposing other end more above from a letter of sea - toe thing derivation end of the first chestnut - *ninguro* - roux side or low - *rakonbea*. This situation is desirable.

[0011]

Thus, A letter of sea - toe thing derivation entrance of a letter of sea - toe thing feed means is established in a direction on the first chestnut - *ninguro* - roux, it can be supplied without making a letter of sea - toe thing have flabby between the first chestnut - *ninguro* - roux by a nature fall by using belt conveyor which, besides, is formed by a slant state or low - *rakonbea*. In addition, It is desirable that a guide member regulating sides of a letter of sea - toe thing in a letter of sea - toe thing feed means is formed.

[0012]

In addition, It is desirable that a letter of sea - toe thing feed means comprises a guiding board regulating a conveying direction of a letter of sea - toe thing installed in between a letter of sea - toe thing derivation end of the first chestnut - *ninguro* - roux side and the first chestnut - *ninguro* - roux. Thus, A letter of sea - toe thing can be transported from abbreviation verticality top of the first chestnut - *ninguro* - roux without it being controlled by transfers of air by establishing a guiding board regulating a conveying direction of a letter of sea - toe thing.

[0013]

Furthermore, The first *te* - professional - roux that adhesion *te* - Pooh to touch the first chestnut - *ninguro* - roux with is wound and the second chestnut - *ninguro* - roux and adhesion *te* - Pooh to contact with comprise the second wound *te* - professional - roux, the first *te* - professional - roux comprises the first a pair of chestnut - *ninguro* - roux and two *te* - professional - roux to contact with respectively, it is desirable that the second *te* - professional - roux comprises the second a pair of chestnut - *ninguro* - roux and two *te* - professional - roux to contact with respectively. Thus, The adhesion thing that bonded to chestnut - *ninguro* - roux because the *te* - professional - roux that adhesion *te* - Pooh to touch chestnut - *ninguro* - roux with is wound is used can be removed, a pretty state can hold chestnut - *ninguro* - roux.

[0014]

[MODE FOR CARRYING OUT THE INVENTION]

As follows, FIG. 1 and an embodiment of a chestnut - *ningu* device of a letter of sea - toe thing hanging in the present invention based on FIG. 2 are described. In addition, In the following discussion, a printed circuit board is explained for an example as a letter of sea - toe thing. In addition, Figure 1 and figure 2 are figures of outline constitution of a chestnut - *ningu* device hanging in the present invention, and FIG. 2 is a feature enlarged view of chestnut - *ningu* region in a chestnut - *ningu* device shown in FIG. 1.

[0015]

1 is a printed circuit board as a letter of sea - toe thing, and 2 is a belt conveyor for a predetermined process to carry in finished printed circuit board 1 to chestnut - *ningu* region A, and, as a center of rotation, it can slant, and, in a figure, as for this belt conveyor 2, it is formed the located printed circuit board derivation end side by chestnut - *ningu* region A side. In addition, A side of printed circuit board 1 is guided in both sides part of belt conveyor 2, guide member 2a to regulate is formed. In addition, When, in the upper part of chestnut - *ningu* part A, printed circuit board 1 falls over belt conveyor 2 which is a slant state, one pair of guiding board 3a, 3b to guide are installed in chestnut - *ningu* part A.

[0016]

It is long, and, among guiding board 3a, 3b, guiding board 3a of belt conveyor 2 side is formed in comparison with guiding board 3b, is formed to around belt conveyor 2 slanted toward. As thus described while printed circuit board 1 which dropped from belt conveyor 2 is guided in guiding board 3a so that guiding board 3a of belt conveyor 2 side is formed to a neighborhood of belt conveyor 2, is generally transported underneath vertically, is interposed between low - roux 6a, 6b to be described below. Then, Printed circuit board 1 is interposed between low - roux 6a, 6b by self-respect without slacking to hang down in a lower course. In addition, By means of guide member 2a formed to belt conveyor 2, a transfer of the crosswise direction of both sides region of a letter of sea - toe thing is generally transported to end of a letter of sea - toe thing between low - roux 6a, 6b at the same time so that it is regulated.

[0017]

In addition, In the lower part of chestnut - *ningu* part A, belt conveyor four or five are formed, and it is configured so that the following step can carry out printed circuit board 1 from this chestnut - *ningu* device. In particular, Belt conveyor 5 can go up and down as shown in FIG. 1 between a downward position and upward positions of chestnut - *ningu* region A of chestnut - *ningu* part A, and it is configured, height same as import height (height of belt conveyor 2) of printed circuit board 1 is had, and it is configured to be able to carry out printed circuit board 1 for the next process.

[0018]

Next, Constitution of chestnut - *ningu* part A is explained. Chestnut - *ningu* part A comprises the first chestnut - *ninguro* - roux 6a, 6b and the first chestnut - *ninguro* - roux 6a, generally perpendicular the second chestnut - *ninguro* - roux 7a, 7b disposed underneath of 6b, it is configured to transport printed circuit board 1 between between the first chestnut - *ninguro* - roux 6a and the first chestnut - *ninguro* - roux 6b and the second chestnut - *ninguro* - roux 7a and the second chestnut - *ninguro* - roux 7b. One or two chestnut - *ninguro* - roux 6a, 6b,

7a, outer circumferential surface of 7b comprise the slight adhesiveness, it is configured so that this outer circumferential surface removes the dust which bonded to printed circuit board 1 by a thing close against printed circuit board 1, adhesion thing such as a dust.

[0019]

And *te* - professional - roux 8a, 8b, 9a, 9b that chestnut - *ningute* - Pooh to touch the outer circumferential surface with is wound are installed in the first chestnut - *ninguro* - roux 6a, 6b and the second chestnut - *ninguro* - roux 7a, 7b again. In this *te* - professional - roux 8a, 8b, 9a, 9b, chestnut - *ningute* - Pooh having the adhesiveness is wound, when place fixed-quantity bonded, a dust, dust tear off the part to this chestnut - *ningute* - Pooh, it is configured so that new chestnut - *ningute* - Pooh exposes. Then, It is configured so that *te* - professional - roux 8a, 8b, 9a, a diameter of 9b change so that an axis can move to the first chestnut - *ninguro* - roux 6a, 6b and the second chestnut - *ninguro* - roux 7a, 7b side.

[0020]

Next, Movement of a chestnut - *ningu* device hanging in the present invention is explained. At first, Printed circuit board 1 is transported from an ex-process, when is put on *be rutokonbea* 2, it is detected, and *be rutokonbea* 2 is slanted mainly on the printed circuit board derivation end side. As a result, While printed circuit board 1 is regulated by guide member 2a of belt conveyor 2, it drops, while is informed guiding board 3a, is generally transported between low - roux 6a, 6b by perpendicular top. Then, Printed circuit board 1 is interposed without slacking between the first chestnut - *ninguro* - roux 6a, 6b, printed circuit board 1 is transported underneath by the first chestnut - *ninguro* - roux 6a, 6b, is interposed between the second chestnut - *ninguro* - roux 7a, 7b.

[0021]

In this way, While printed circuit board 1 touches the first chestnut - *ninguro* - roux 6a, 6b, the second chestnut - *ninguro* - roux 7a, 7b, while a dust, the dust which bonded to printed circuit board 1 are removed, is transported to belt conveyor 5. And, Adhesion thing such as a dust, the dust which bonded to the first chestnut - *ninguro* - roux 6a, 6b, the second chestnut - *ninguro* - roux 7a, 7b bonds to *te* - professional - roux 8a, 8b, 9a, 9b, the first chestnut - *ninguro* - roux 6a, 6b, the second chestnut - *ninguro* - roux 7a, cleaning of 7b in itself are done. By this, Adhesion thing such as a dust, the dust which bonded to the first chestnut - *ninguro* - roux 6a, 6b, the second chestnut - *ninguro* - roux 7a, 7b does not need to bond to printed circuit board 1 again.

[0022]

And, as for *te* - professional - roux 8a, 8b, 9a, 9b, chestnut - *ningute* - Pooh having the adhesiveness is wound, when place fixed-quantity bonded, adhesion thing such as a dust, dust tears off the part to this chestnut - *ningute* - Pooh, it makes new chestnut - *ningute* - Pooh be exposed, *te* - professional - roux 8a, 8b, 9a, 9b are cleaned.

[0023]

And printed circuit board 1 transported to belt conveyor 4 again is transported to *be rutokonbea* 5, by means of belt conveyor 5, printed circuit board 1 is lifted to height same as belt conveyor 2, it is transported to the following step. In addition, After the transportation, belt conveyor 5 drops, is put at a position in proximity to belt conveyor 4.

[0024]

In addition, When, as shown in an arrow of FIG. 2 (a), use of this chestnut - *ningu* device is stopped, *te* - professional - roux 8a, 8b, 9a, 9b, left-and right-hand (a conveying direction and vertical direction of a printed circuit board), it moves. And left-and right-hand the first chestnut - *ninguro* - roux 6a, 6b, the second chestnut - *ninguro* - roux 7a, 7b again (a conveying direction and vertical direction of a printed circuit board), it moves. As a result, As shown in FIG. 2 (b), the first chestnut - *ninguro* - roux 6a, 6b, the second chestnut - *ninguro* - roux 7a, 7b are thrown open by *te* - professional - roux 8a in those outer circumferential surface, 8b, 9a, a contact state with 9b.

[0025]

Thus, Because when use of a chestnut - *ningu* device is stopped, *te* - professional - roux 8a, 8b, 9a, 9b do not touch with the first chestnut - *ninguro* - roux 6a, 6b, the second chestnut - *ninguro* - roux 7a, 7b, adhesive of chestnut - *ningute* - Pooh can prevent a situation copied by the first chestnut - *ninguro* - ra 6a, 6b, the second chestnut - *ninguro* - roux 7a, one part of outer circumferential surface of 7b. In addition, The first chestnut - *ninguro* - roux 6a, 6b, the second chestnut - *ninguro* - roux 7a, transformation of 7b can be prevented.

[0026]

As above, The first, the second chestnut - *ninguro* - roux are generally disposed perpendicularly, while making

generally transport printed circuit board 1 perpendicularly, according to the chestnut - *ningu* device removing adhesion thing of printed circuit board 1, slack does not produce in tip portion of a letter of sea - toe thing, and chestnut - *ninguro* - roux 6a, 6b can be interposed in, there do not need to be a wrinkle, the thing that it is broken, and bending produces to printed circuit board 1.

[0027]

In addition, In the embodiment, the case that generally disposed the first, the second chestnut - *ninguro* - roux perpendicularly was explained, but, needed not to be limited to this, and the third, the fourth class chestnut - *ninguro* - roux may have been generally disposed perpendicularly particularly. In addition, In the embodiment, the case that made guide member 2a for belt conveyor 2 was shown, but, guide member 2a needs not to be made in particular. Preferably, Guide member 2a had better be made for belt conveyor 2. In addition, Guide member may be made for guiding board 3a, preferably a guide member had better be arranged in belt conveyor 2 and guiding board 3a.

[0028]

In addition, In the embodiment, a case with the use of a belt conveyor was explained, but, it may be low - *rakonbea*. Furthermore, In the embodiment, the thing which belt conveyor 2 rotated, and formed a slant state was explained for an example, but, it may be the belt conveyor which is fixed to a slant state without rotating. Then, Low - *rakonbea* which does not have a drive function is desirable for a letter of sea - toe thing to drop naturally.

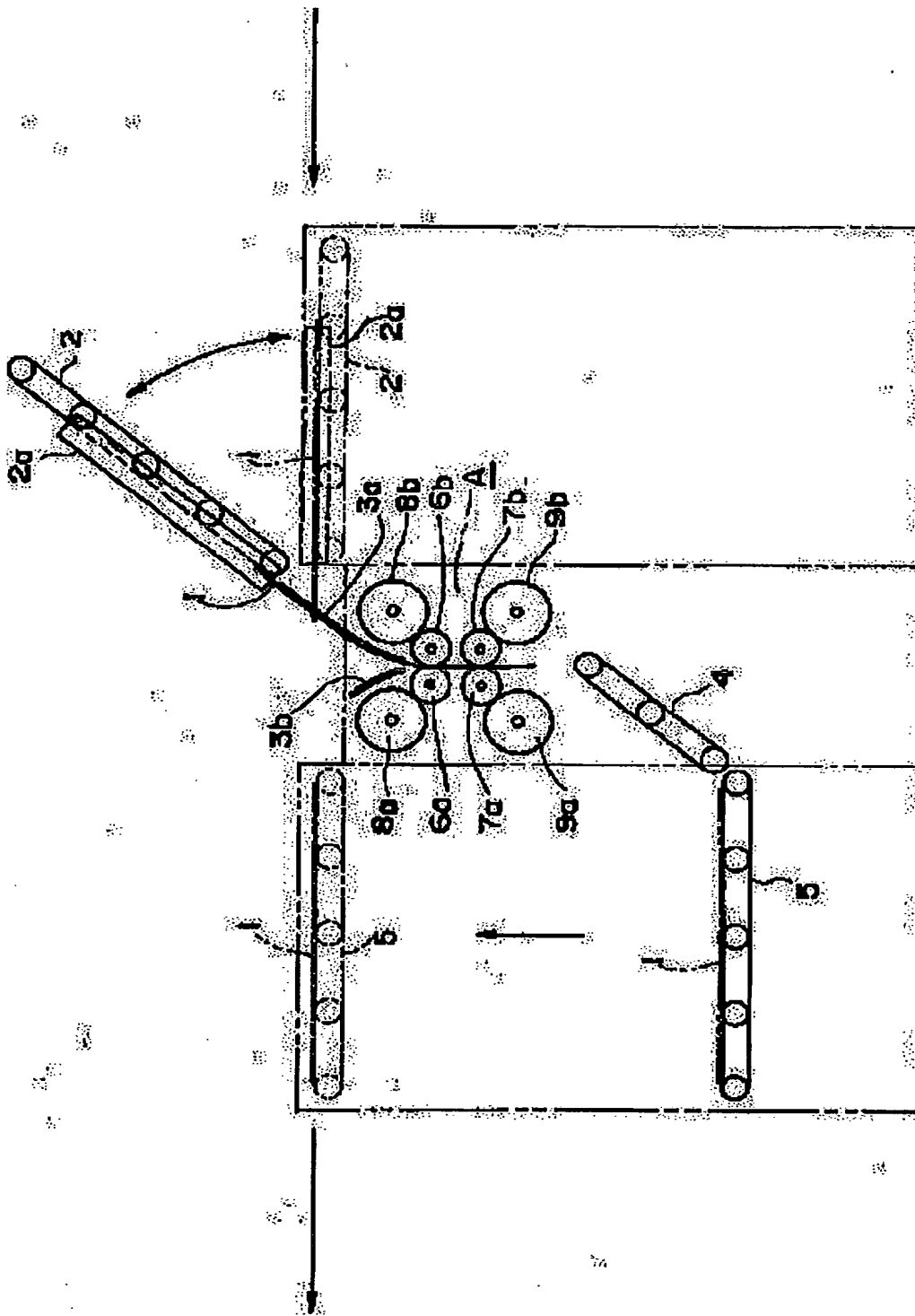
[0029]

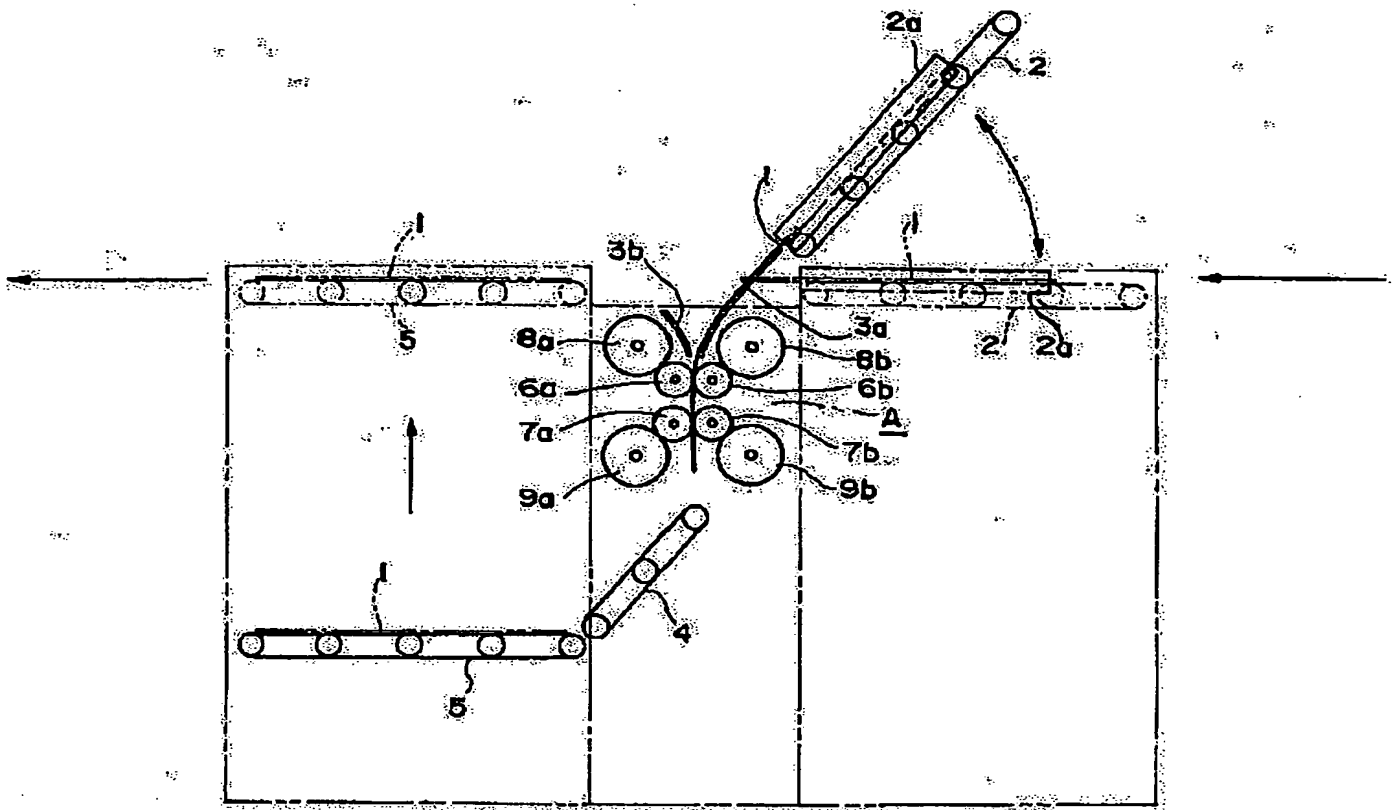
Furthermore, in the embodiment, chestnut - *ningute* - Pooh having the adhesiveness is wound as *te* - professional - roux 8a, 8b, 9a, 9b, when place fixed-quantity bonded, a dust, dust tear off the part to this chestnut - *ningute* - Pooh, the thing which made new chestnut - *ningute* - Pooh expose was used, but, it may make run an adhesion film shown in conventional embodiment between low - roux.

[0030]

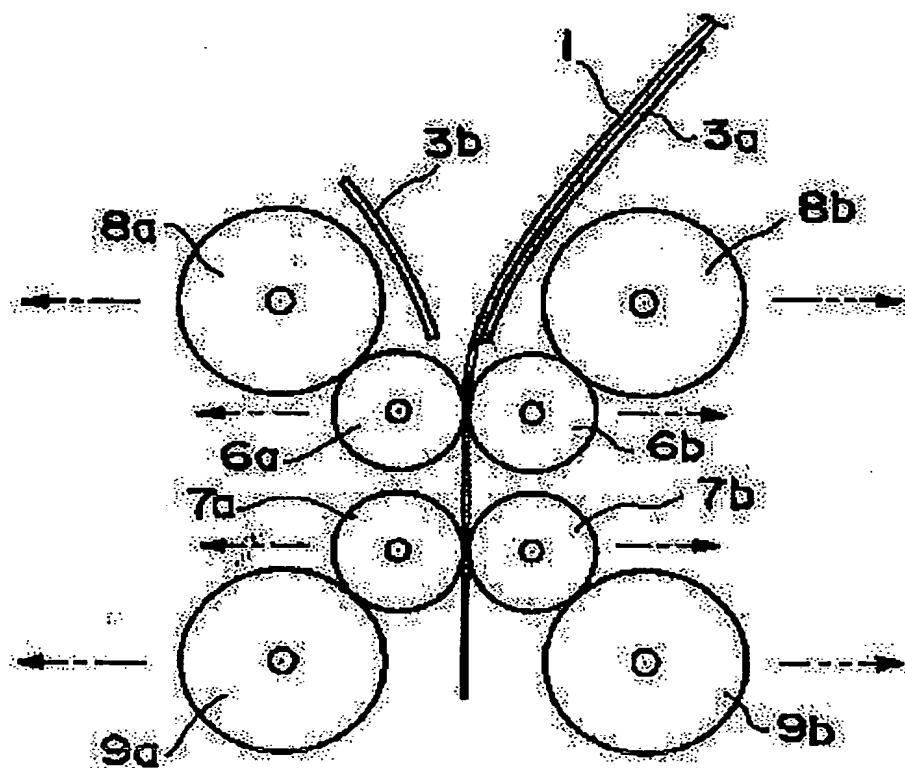
[EFFECT OF THE INVENTION]

The present invention can remove adhesion thing such as a dust dust without a wrinkle, occasion bending occurring to a letter of sea - toe thing by having adopted the constitution.

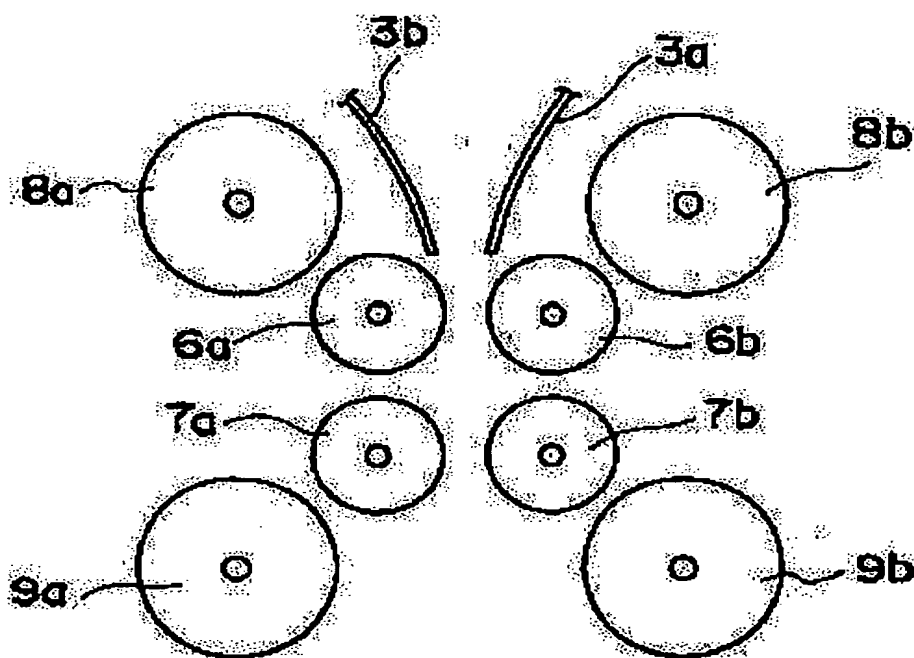


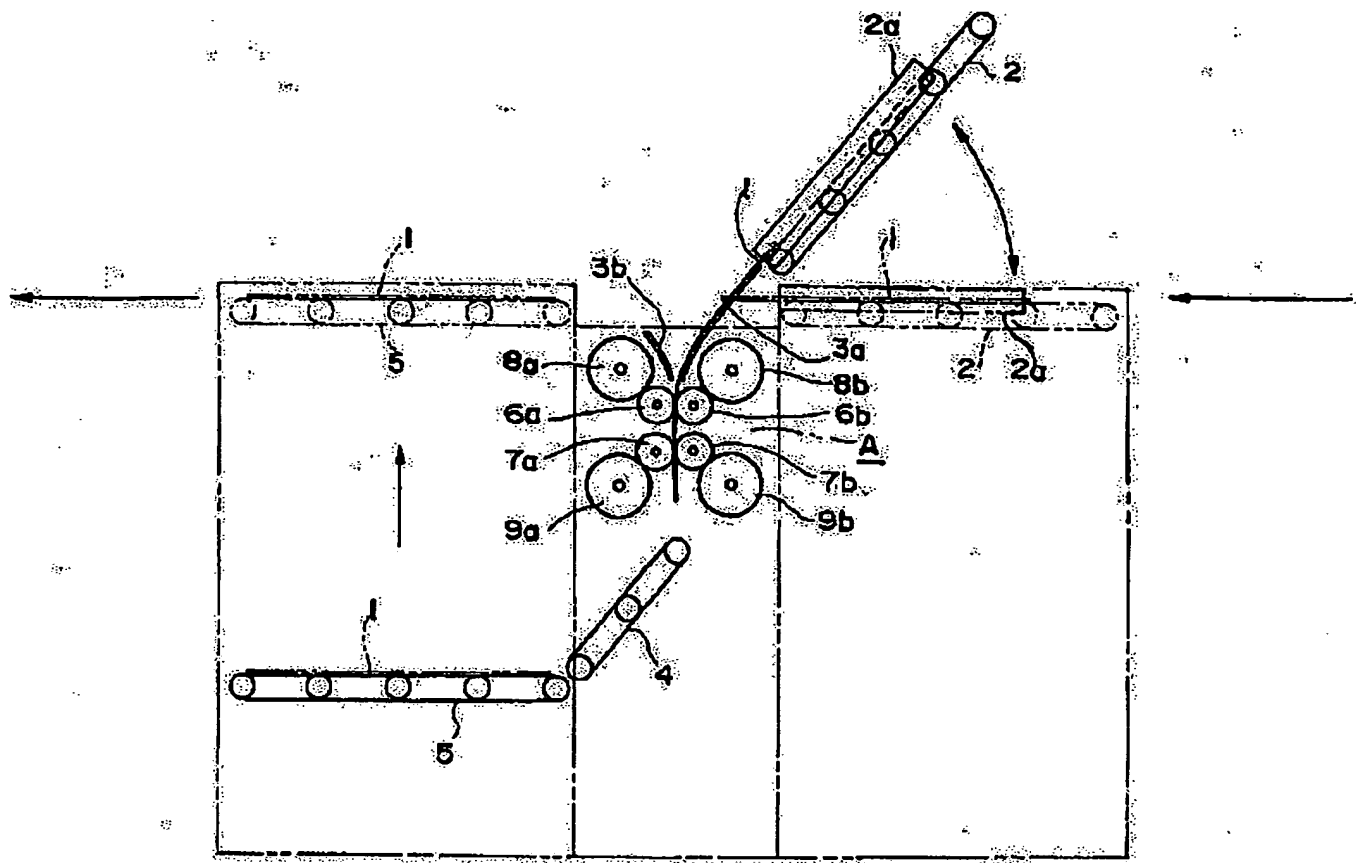


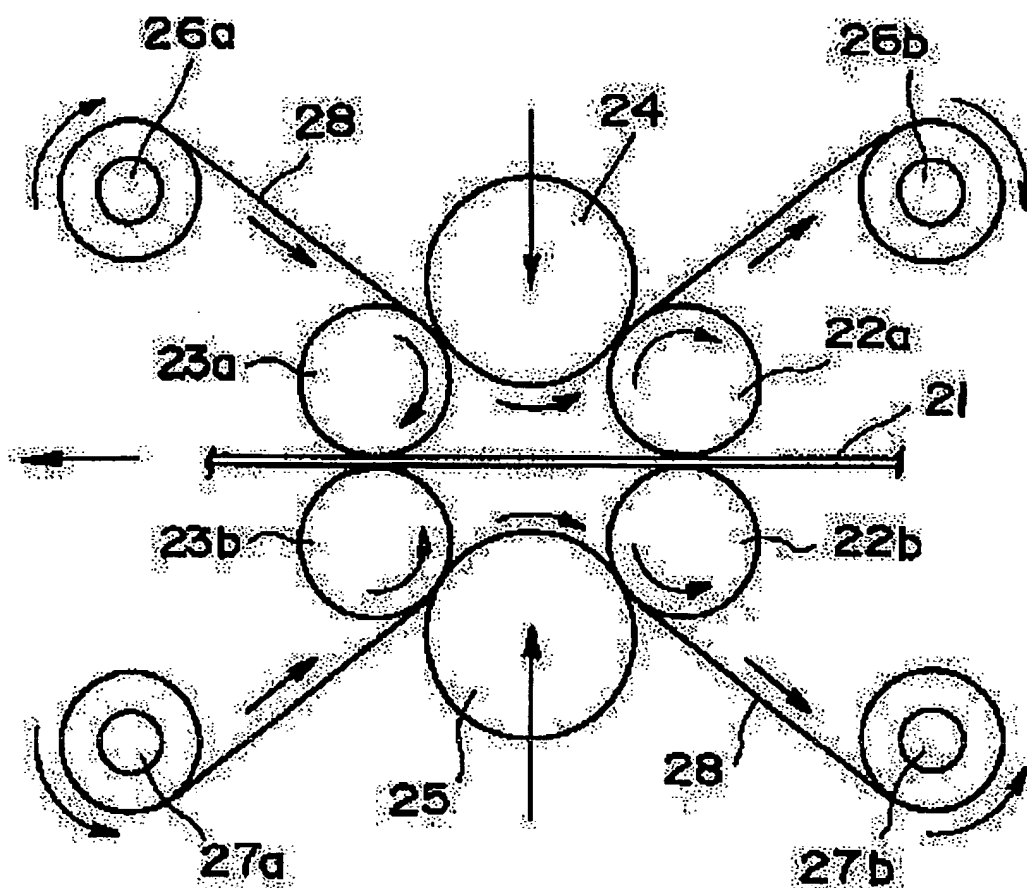
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